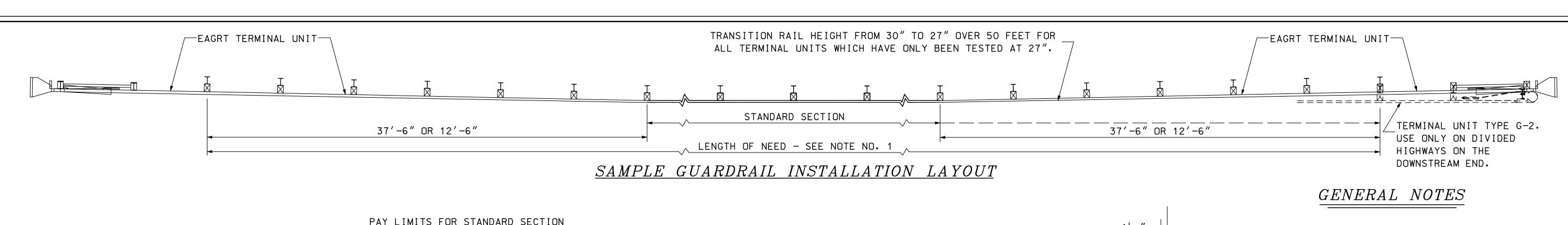
STANDARD

NO. GR-2

REVISION DATE 07-13-2001 06-16-2010 05-03-2011

*.DGN FILE NAME

GR-2





USE APPROPRIATE APPROVED USE APPROPRIATE APPROVED FACE OF GUARDRAIL AS SHOWN ON THE TYPICAL SECTION TERMINAL UNIT, BRIDGE TERMINAL UNIT, BRIDGE APPROACH UNIT, ETC. APPROACH UNIT, ETC. <u>PLAN</u>

4" × 6" STEEL POST WITH W-BEAM - $^{-}6'' \times 8''$ WOOD OFFSET BLOCK (TYP.) SHOULDER GRADE AT **ELEVATION** EDGE OF PAVEMENT - TRANSITION RAIL HEIGHT FROM 30 $^{\prime\prime}$ TO 27 $^{\prime\prime}$

STANDARD SECTION

606.120 - BEAM GUARDRAIL (STANDARD SECTION-STEEL POSTS)

PAID: LINEAR FOOT

 $1''\phi \times \frac{1}{8}''$ DEEP

RECESS BOTH SIDES

ITEM

121/4"

SECTION THRU RAIL ELEMENT

[RWM02a (12'-6") OR RWM22a (25'-0")]

SHEET THICKNESS

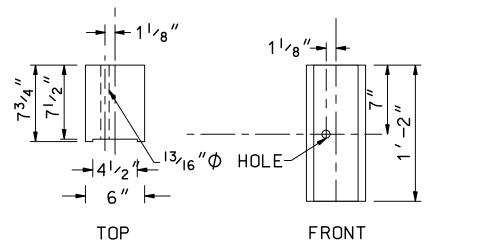
12 GAUGE (0.109")

2⁵/16"

31/4"

WHEREVER GUARDRAIL IS REQUIRED (NOTE: STEEL POSTS FOR PERMANENT INSTALLATIONS MAY ONLY BE USED IF SPECIFICALLY APPROVED BY

THE CHIEF ENGINEER.) 11/8"-NEUTRAL AXIS -41/2 13/16"\$\phi\$ HOLE~ 55° 55°



OVER 50 FEET FOR ALL TERMINAL UNITS WHICH

HAVE ONLY BEEN TESTED AT 27".

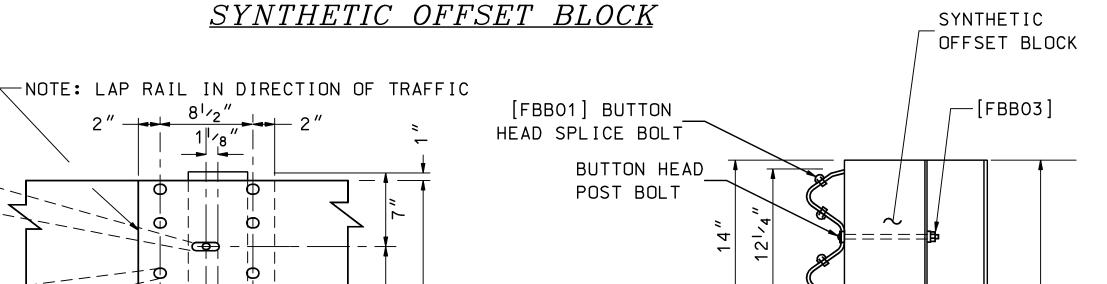
STRUCTURAL SHAPE STEEL POST

-| 4" |-

FRONT

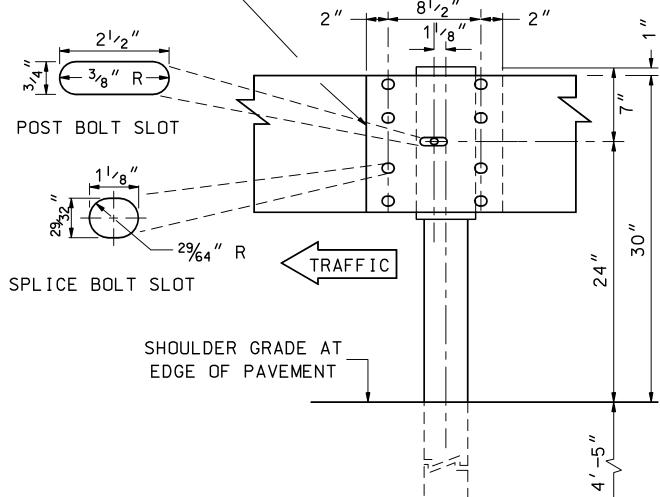
 $3_{4}'' \phi$ HOLE-

- W6 \times 8.5

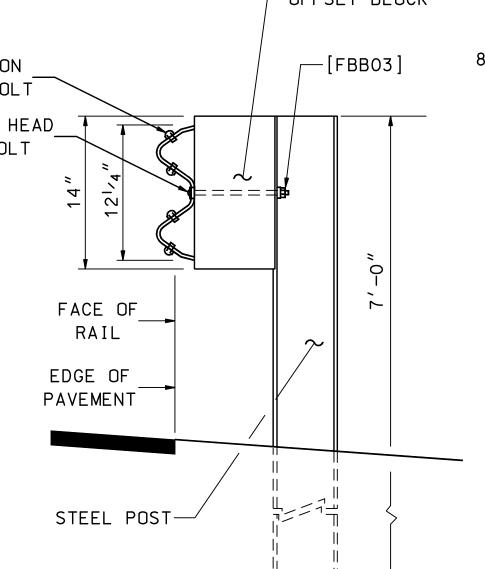


→ 57/8" |

SIDE



LINE POST ELEVATION VIEW AT BEAM SPLICE



TYPICAL SIDE VIEW (SHOWN WITH FASTENERS)

- 2. DESIGNATIONS PROVIDED IN BRACKETS [] REFERENCE STANDARD ELEMENTS DETAILED IN "A GUIDE TO STANDARDIZED HIGHWAY BARRIER HARDWARE", LATEST ADOPTED VERSION, AASHTO-AGC-ARTBA JOINT COOPERATIVE COMMITTEE.
- 3. THE RECTANGULAR PLATE WASHER [FWRO3] IS USED ONLY FOR 37'-6" OF STANDARD SECTION UPSTREAM OF A TERMINAL UNIT TYPE G-2 (SEE STANDARD NO. GR-10).
- 4. USE 12'-6" LENGTH RAIL ELEMENT IN CURVES OF LESS THAN 300' RAIL RADIUS.
- 5. WHEN GUARDRAIL IS INSTALLED BEHIND CURB, EITHER 6'-0" BEHIND SLOPE CURB ON A CURBED RAMP OR AT THE BACK OF SIDEWALK WITH BARRIER CURB, THE RAIL HEIGHT SHALL BE SET FROM THE GRADE AT THE FACE OF RAIL.
- 6. POSTS SHORTER THAN THE 7'-0" INDICATED ON THE DETAIL, BUT NOT LESS THAN 6'-0", MAY ONLY BE USED WHEN
 - A) THE SLOPE BEHIND THE GUARDRAIL IS NO STEEPER THAN 4:1
 - B) WHERE THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK OF THE SLOPE IS A MINIMUM OF 2'-0"
 - C) AND THEN ONLY AS APPROVED OR SPECIFICALLY SHOWN ON THE PLANS.
- 7. TO INSTALL THE 7'-0" POSTS IN ROCK FILL AREAS AND IN AREAS OF OTHER DIFFICULT SITE CONDITIONS, METHODS SUCH AS AUGURING, EXCAVATING, AND OTHER MORE UNUSUAL METHODS MAY BE REQUIRED FOR INSTALLING POSTS. THOSE CONDITIONS AND THE REQUIREMENT FOR UNUSUAL METHODS OF POST INSTALLATION ARE NOT CONSIDERED JUSTIFICATION FOR REDUCING THE EMBEDMENT DEPTH OF THE POSTS AND WILL NOT BE APPROVED AS SUCH.
- 8. THE FHWA ADMINISTRATION HAS APPROVED THE USE OF OFFSET BLOCKS WITH DIMENSIONS THAT VARY MORE THAN WOULD BE CONSIDERED WITHIN THE NORMAL CONTEXT OF NOMINAL DIMENSIONS. IN ORDER TO PROPOSE THE USE OF ANY OFFSET BLOCKS THAT HAVE OTHER THAN THE NOMINAL DIMENSIONS SHOWN ON THE DETAILS, THE FOLLOWING CRITERION APPLIES:
 - A) THE OFFSET BLOCKS BE SHOWN TO BE APPROVED BY THE FHWA ADMINISTRATION AS MEETING THE TL-3 CRITERIA AS DESCRIBED IN THE NCHRP 350 TESTING,
 - B) THE FACE OF RAIL MUST REMAIN AT THE EDGE OF PAVEMENT OR AT THE INDICATED OFFSET, PER THE DESIGN PLANS, AND
 - C) THERE MUST NOT BE A DECREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE AS SHOWN ON THE DESIGN PLANS. AN INCREASE IN THE DISTANCE FROM THE BACK OF THE POST TO THE BREAK IN THE SLOPE IS ACCEPTABLE.
 - D) ALL OTHER REQUIREMENTS OF THE PERTINENT SPECIFICATIONS AND DETAILS REMAIN IN FORCE.

GUARDRAIL STANDARD

BEAM GUARDRAIL STANDARD SECTION-STEEL POSTS & HARDWARE DETAILS



STANDARD NO. GR-2

|DESIGNATOR| L INTENDED USE 11/4" FULL LENGTH THREAD RAIL SPLICE BOLTS 13/4" MIN. THREAD LENGTH POST BOLT (STEEL POSTS) FBB02 $9\frac{1}{2}$ " 4" MIN. THREAD LENGTH FBB03 POST BOLT

5/8" BUTTON HEAD BOLT AND RECESSED NUT [FBB01-03]